

**Notice of Allowability**

Application No.

09/594,467

Examiner

Duc C. Ho

Applicant(s)

ALAMOUTI ET AL.

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the amendment filed 9-06-05.
2. ☒ The allowed claim(s) is/are 1, 2, 4-6, 8-9, 12-13, 11, 14-15, 17-20, 23-24, 22, 25-26, 28-30. Renumbered 1-24, respectively.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some\* c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date \_\_\_\_\_
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☒ Notice of Informal Patent Application (PTO-152)
6. ☒ Interview Summary (PTO-413), Paper No./Mail Date 11-01-05.
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_.

### EXAMINER 'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Matthew S. Anderson on 11-02-05.

The application has been amended as follows:

In the claims:

Claims 3, 7, 10, 16, 21, and 27 are canceled.

Claim 1, line 15, after "call", insert ---, wherein each wireless voice traffic channel is deassignable during a voice communication call ---.

Claim 5, line 11, after "call", insert ---, wherein providing the plurality of wireless voice traffic channels further comprises providing wireless voice traffic channels that are deassignable during a voice communication call ---.

Claim 9, line 14, after "call", insert ---; (next line)

receiving RF OFDM communication signals over a data traffic channel, the data traffic channel identifiable by a unique frequency/time slot combination;

for each frequency/time slot combination associated with data traffic channel:

applying an FFT to the OFDM communication signal samples for producing a plurality of modulated tones; and

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demodulating the plurality of modulated tones for producing high speed data in addressed data packets ---.

Claim 15, line 13, after "channel", insert --- ; (next line)

for each frequency/time slot combination associated with a voice traffic channel:

modulating a plurality of tones with voice data of a voice communication call that is assigned to the voice traffic channel;

applying an Inverse Fast Fourier Transform (IFFT) to the plurality of modulated tones for producing Orthogonal Frequency Division Multiplexed (OFDM) communication signal samples;

converting the OFDM communication signal samples to OFDM communication signals;

upconverting the OFDM communication signals for producing radio frequency (RF) OFDM communication signals; and

transmitting the RF OFDM communication signals over the voice traffic channel ---.

Claim 20, line 18, after "call", insert --- ; (next line)

said receiver front end being further operative to receive RF OFDM communication signals over a data traffic channel, the data traffic channel identifiable by a unique frequency/time slot combination;

said FFT processor being further operative to apply an FFT to the RF OFDM communication signal samples for producing a plurality of modulated tones for each frequency/time slot combination associated with the data traffic channel; and

said demodulator being further operative to demodulate the plurality of modulated tones for each frequency/time slot combination associated with the data traffic channel for producing the high speed data in addressed data packets ---.

Claim 26, line 17, after "channel", insert --- ; (next line)

said modulator being further operative to modulate a plurality of tones with high speed data for each frequency/time slot combination associated with a traffic channel, the high speed data being carried in addressed data packets;

said IFFT processor being further operative to apply the IFFT to the plurality of modulated tones for each frequency/time slot combination associated with the data traffic channel for producing OFDM communication signals; and

said transmitter front end being further operative to transmit the RF OFDM communication signals over the data traffic channel ---.

### ***Reason for Allowance***

2. Regarding claims 1, 2, 4-6, and 8, the prior art fails to teach or suggest a fixed wireless system utilizing OFDM, the fixed wireless system comprises each wireless traffic channel being identifiable by a unique of combination of frequency and time slots, wherein each wireless traffic channel is deassignable during a voice communication call, in combination with other limitations, as specified in the independent claims 1, and 5.

Regarding claims 9, 12-13, the prior art fails to teach or suggest a method of receiving data in a wireless communication system, the method comprises the steps for

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each frequency/time slot combination associated with the data traffic channel: applying an FFT to the OFDM communication signal samples for producing a plurality of modulated tones; and demodulating the plurality of modulated tones for producing high speed data in addressed data packets, in combination with other limitations, as specified in the independent claim 9.

Regarding claim 11, the prior art fails to teach or suggest a method of receiving data in a wireless communication system, the method comprises the steps repeating the following steps for each of a plurality of addressed data packets: comparing a destination address of the addressed data packet with a predetermined address; accepting the addressed data packet if a match exists between the destination address and the predetermined address; and discarding the addressed data packet if the destination address and the predetermined address do not match, in combination with other limitations, as specified in the independent claim 11.

Regarding claim 14, the prior art fails to teach or suggest a method of receiving data in a wireless communication system, the method comprises a step in which demodulating comprises demodulating involving 16-Quadrature Amplitude Modulation (QAM), wherein decoding comprises decoding involving Reed-Solomon block codes, and wherein decompressing comprises decompressing involving Code Excited Linear Predictive (CELP) decompression, in combination with other limitations, as specified in the independent claim 14.

Regarding claims 15, and 17-18, the prior art fails to teach or suggest a method of transmitting data in a wireless communication system, the method comprises the

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steps in which for each frequency/time slot combination associated with a voice traffic channel: modulating a plurality of tones with voice data of a voice communication call that is assigned to the voice traffic channel; applying an Inverse Fast Fourier Transform (IFFT) to the plurality of modulated tones for producing Orthogonal Frequency Division Multiplexed (OFDM) communication signal samples; converting the OFDM communication signal samples to OFDM communication signals; upconverting the OFDM communication signals for producing radio frequency (RF) OFDM communication signals; and transmitting the RF OFDM communication signals over the voice traffic channel, in combination with other limitations, as specified in the independent claim 15.

Regarding claim 19, the prior art fails to teach or suggest a method of receiving data in a wireless communication system, the method comprises a step in which modulating comprises modulating using 16-Quadrature Amplitude Modulation (QAM), wherein encoding comprises using Reed-Solomon block codes, and wherein compressing comprises using Code Excited Linear Predictive (CELP) compression, in combination with other limitations, as specified in the independent claim 19.

Regarding claims 20, and 23-24, the prior art fails to teach or suggest a wireless receiver comprising the receiver front end being further operative to receive RF OFDM communication signals over a data traffic channel, the data traffic channel identifiable by a unique frequency/time slot combination; the FFT processor being further operative to apply an FFT to the RF OFDM communication signal samples for producing a plurality of modulated tones for each frequency/time slot combination associated with the data

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traffic channel; and the demodulator being further operative to demodulate the plurality of modulated tones for each frequency/time slot combination associated with the data traffic channel for producing the high speed data in addressed data packets, in combination with other limitations, as specified in the independent claim 20.

Regarding claim 22, the prior art fails to teach or suggest a wireless receiver comprising a processor, the processor operate to compare a destination address of the addressed data packet with a predetermined address, to accept the addressed data packet if a match exists between the destination address and the predetermined address, and to discard the addressed data packet if the destination address and the predetermined address do not match, in combination with other limitations, as specified in the independent claim 22.

Regarding claim 25, the prior art fails to teach or suggest a wireless receiver comprising the demodulator comprising a 16-Quadrature Amplitude Modulated (QAM)-based demodulator; the decoder comprising a Reed-Solomon decoder; and the decompressor comprising a Code Excited Linear Predictive (CELP) decompressor, in combination with other limitations, as specified in the independent claim 25.

Regarding claim 26, the prior art fails to teach or suggest a wireless transmitter comprising the modulator being further operative to modulate a plurality of tones with high speed data for each frequency/time slot combination associated with a traffic channel, the high speed data being carried in addressed data packets; the IFFT processor being further operative to apply the IFFT to the plurality of modulated tones for each frequency/time slot combination associated with the data traffic channel for

producing OFDM communication signals; and the transmitter front end being further operative to transmit the RF OFDM communication signals over the data traffic channel, in combination with other limitations, as specified in the independent claim 26.

Regarding claim 30, the prior art fails to teach or suggest a wireless transmitter comprising the modulator comprising a 16-Quadrature Amplitude Modulated (QAM)-based demodulator; the block encoder comprising a Reed-Solomon decoder; and the vocoder comprising a Code Excited Linear Predictive (CELP) vocoder, in combination with other limitations, as specified in the independent claim 30.

3. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Duc Ho whose telephone number is (571) 272-3147. The examiner can normally be reached on Monday through Friday from 7:00 am to 3:30 pm.

If attempt to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy Vu, can be reached on (571) 272-3155.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (571) 272-2600.



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5. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Patent Examiner

A handwritten signature in black ink, appearing to read 'Duc Ho', written over the printed name.

Duc Ho

11-02-05



UNITED STATES DEPARTMENT OF COMMERCE  
Patent and Trademark Office

Address: COMMISSIONER OF PATENTS AND TRADEMARKS  
Washington, D.C. 20231

APPLICATION NUMBER	FILING DATE	FIRST NAMED APPLICANT	ATTY DOCKET NO./TITLE
09/544,467	6/14/00	SIYAVASH	1999-0342 (STG 168)

DATE MAILED:

NOTICE OF INFORMAL APPLICATION

(Attachment to Office Action)

This application does not conform with the rules governing applications for the reason(s) checked below. The period within which to correct these requirements and avoid abandonment is set in the accompanying Office action.

A. A new oath or declaration, identifying this application by the application number and filing date is required. The oath or declaration does not comply with 37 CFR 1.63 in that it:

1. ☐ does not identify the city and state or foreign country of residence of each inventor.
2. ☐ does not identify the citizenship of each inventor.
3. ☐ does not state whether the inventor is a sole or joint inventor.
4. ☐ does not state that the person making the oath or declaration:
  - a. ☐ has reviewed and understands the contents of the specification, including the claims, as amended by any amendment specifically referred to in the oath or declaration.
  - b. ☐ believes the named inventor or inventors to be the original and first inventor or inventors of the subject matter which is claimed and for which a patent is sought.
  - c. ☐ acknowledges the duty to disclose information which is material to the examination of the application in accordance with 37 CFR 1.56(a).
5. ☐ does not identify the foreign application for patent or inventor's certificate on which priority is claimed pursuant to 37 CFR 1.55, and any foreign application having a filing date before that of the application on which priority is claimed, by specifying the application serial number, country, day, month, and year of its filing.
6. ☐ does not state that the person making the oath or declaration acknowledges the duty to disclose material information as defined in 37 CFR 1.56(a) which occurred between the filing date of the prior application and filing date of the continuation-in-part application which discloses and claims subject matter in addition to that disclosed in the prior application (37 CFR 1.63(d)).
7. ☐ does not include the date of execution.
8. ☐ does not use permanent ink, or its equivalent in quality, as required under 37 CFR 1.52(a).
9. ☐ contains non-initialed alterations (See 37 CFR 1.52(c)).

10. ☒ Other: There is no signature for two inventors  
# 1 SIYAVASH ALAMOUTI  
# 10 DAVID J. NIX

B. Applicant is required to provide:

1. ☐ A statement signed by applicant giving his or her complete name. A full name must include at least one given name without abbreviation as required by 37 CFR 1.41(a).
2. ☐ Proof of authority of the legal representative under 37 CFR 1.44.
3. ☐ An abstract in compliance with 37 CFR 1.72(b).
4. ☐ A statement signed by applicant giving his or her complete post office address (37 CFR 1.33(a)).
5. ☐ A copy of the specification written, typed, or printed in permanent ink, or its equivalent in quality as required by 37 CFR 1.52(a).
6. ☐ Other: